

PDR RID Report

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Document SDPS - Data Processing Subsystem

RID ID	PDR	416
Review	SDPS	
Originator Ref	LISDM003	
Priority	2	

Section 9.2.4.3.4.3

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Figure Table N/A

Category Name Design-Data Processing

Actionee HAIS

Sub Category

Subject PGE Resource Limits

Description of Problem or Suggestion:

The description of "external errors" is too vague. It is VERY difficult to design code that will respond to unknown and unpredictable external errors in a known and predictable way.

Originator's Recommendation

We need more specifics on what type of external errors are possible so we can anticipate them. We need guidelines to deal with errors OUTSIDE of the LIS algorithm that might crash the LIS code. We need guidelines on how to "exit gracefully" when an unpredictable external error crashes the LIS code.

GSFC Response by:

GSFC Response Date

HAIS Response by: Eisenstein

HAIS Schedule 4/21/95

HAIS R. E. M. Shannon

HAIS Response Date 5/10/95

At this time, there will not be any new level 4 requirements to address this issue, but as part of the complete resolution of this RID, new level 4 requirements may be necessary. The following summarizes the problem and ongoing work which will be performed to complete the response to this RID.

The area of PGE Exception Handling has been identified as an area of focus during the Detailed Design timeframe. Exceptions are caused by many different types of potential problems; Corrupted Data, Software problems within the Science Software, or Hardware Problems.

One of the most important aspects of exception handling is for the PGE to gracefully (if possible) shutdown execution of the PGE and to capture information on the type of exception encountered. Also, it is desirable that the PGE should be capable of informing the Processing software of exceptions through the use of Exit return codes. These return codes will inform the Processing software of the success or failure of the execution of the PGE and will map to a particular recovery action(s) which Processing may take. These actions may consist of the following types of activities :

(1) Re-running the PGE with some additional debug flags set to gather more information.

(2) Run another PGE as a result of the failure of the PGE. (Support of Fault trees of PGEs).

(3) Capture all output produced by the PGE, destage to the working storage area of the Data Server.

(4) Inform Instrument teams and operations staff of the PGE failure and location of PGE failure data.

Development of a robust PGE exception handling capability will be a joint effort of the PDPS development team and the Instrument teams. The following activities will occur during the Detailed Design time frame :

(1) Development of a complete set of external error conditions which may impact the PGE.

(2) Development of a generic set of return codes which the PGE will use to inform the Processing software of the success or failure of the execution of the PGE.

(3) Determine what type of recovery actions which the Processing software may perform.

(4) Determine unique requirements for exception handling for each instrument team.

As a result of this effort, guidelines for PGE exception handling will be produced and made available to the instrument teams.

Also, there is a potential to add level 4 requirements to the PRONG (Processing) CSCI to further document the activities for which the Processing software is responsible.

Status Closed

Date Closed 5/24/95

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***** Attachment if any *****
